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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,496	04/21/2004	Matthias Boltze	033171-3	4305
25570	7590	05/15/2007		
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EXAMINER				
RUTLAND WALLIS, MICHAEL				
ART UNIT		PAPER NUMBER		
2836				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/828,496

Applicant(s)

BOLTZE ET AL.

Examiner

Michael Rutland-Wallis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings contain numerous hand drawn lettering and numbering. The corrected drawings are required in reply to the Office action to avoid abandonment of the application.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

The objections to the drawings will not be held in abeyance.

Response to Arguments

Applicant has amended to cancel claim 4 therefore the previous objection is moot and is withdrawn further the drawing objection under 37 CFR 1.83(a) is similarly withdrawn.

Applicant has failed to submit drawings in compliance with 37 CFR 1.121(d). Presently the record contains only drawings with hand drawn element numbers, labeling and arrows. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings.

Applicant's arguments filed 3/5/2007 have been fully considered but they are not persuasive. Applicant alleges the prior art does not teach an output of a converted and unconverted output electrical power via a DC-to-DC converter. In response Raiser teaches a DC converter with a first and second output electrical power. Raiser also teaches one may adjust the output voltages as needed (col. 4 lines 14-16). Raiser does not disclose a teaching of an output, which is unconverted. Jungreis teaches in figure 4 an output from a fuel cell, which is converted and supplied to a load and further, teaches one may instead regulate the fuel cell for example (col. 2 lines 20-35). The unconverted output voltage of Jungreis is supplied to a load in such a way that a less expensive power conditioning system may be utilized. Jungreis further points out the efficiency is increased since no power electronics are between the fuel cell and the load (col. 3 lines 47-50). The arrangement of parts to have the unconverted line pass through the converter module would have been obvious to one of ordinary skill in the art to in order supply a load with the power that has not been converted in order to reduce the complexity of the power conditioning system thereby reducing the costs and increase the efficiency of the second output electrical power.

In view of the above the rejection is proper and is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 5-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raiser (U.S. Pat. No. 6,177,736) in view of Jungreis (U.S. Pat. No. 6,881,509)

With respect to claim 1, 5-7 and 11 Raiser teaches a system and process for operating an electrical consumer (not shown connected to Vout terminals) with electrical power (DC voltage), comprising the steps of: delivering a DC voltage generated by a fuel cell (item 12) auxiliary power unit to a DC/DC converter (item 10), converting a portion (Vout2) of the DC voltage generated by the fuel cell auxiliary power unit to a voltage that is matched to the voltage of the vehicle electrical system (col. 4 lines 14-16). Raiser also teaches the use of a second output connection (item 16) to provide a high voltage DC bus to power load requiring significantly more power typical than a typical 12 volt DC bus in a vehicle. Raiser utilizes a typical microcontroller based PWM signal to control output voltage. Raiser does not teach the second output connection is unconverted at the second output, however does note the PWM rate may be adjusted to match any desired voltage output (col. 3 lines 10-17). Jungreis teaches a fuel cell power

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unit (Fig. 4) and a connection to a consumer (Aux power item 20) which is unconverted in order to reduce the cost and size of the fuel cell power system (col. 2 lines 30-50). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a two output of a DC converter wherein one output is to a consumer wherein an unconverted voltage is supplied in order to reduce the complexity thereby reducing the costs of the power conditioning of the converter when the output voltage of the fuel cell is the same voltage of the load connected thereto (see col. 3 lines 47-50 and col. 2 lines 20-35).

With respect to claims 2 and 8 Raiser teaches the at least one consumer is a high wattage consumer (400VDC at 195 amps).

Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raiser (U.S. Pat. No. 6,177,736) in view of Jungreis (U.S. Pat. No. 6,881,509) as applied to claims 2 and 8 above, and further in view of Chiao (U.S. Pat. No. 6,119,454)

With respect to claim 3 and 9 Raiser as modified above does not detail examples of particular loads which may be connected to the high wattage connection, however compressor motors are commonly found in vehicles to power vehicle climate systems, see for example Chiao (col. 3 lines 15-30) teaches the connection an air condition compressor to a vehicle electrical HVDC bus. It would have been obvious to one of ordinary skill in the art at the time of the invention to connect such a load in order to provide air conditioning to the occupants of the vehicle.

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raiser (U.S. Pat. No. 6,177,736) in view of Jungreis (U.S. Pat. No. 6,881,509) as

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applied to claims 1 and 6 above, and in view of Chiao (U.S. Pat. No. 6,125,798) as applied to claims 3 and 9 above, and in further view of Kuwayama et al. (U.S. Pat. No. 6,125,798)

With respect to claims 4 and 10 Raiser as modified above does not detail the control a compressor motor for an air conditioning compressor. Kuwayama teaches control of a motor for air conditioning independently. Kuwayama teaches a PWM signal to maintain a constant wattage independently of the compressor motor. It would have been obvious to one of ordinary skill in the art at the time of the invention to control the compressor independently in order to maintain a constant temperature.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRW



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